

Asynchronous Spread-Spectrum Communications

ABSTRACT OF THE DISCLOSURE

5 Communications from autonomous spread-spectrum transmitters are received by
dynamically searching the communications band for messages having the same communications
parameters, including the use of the same spreading code, but having potentially different code-
phases. A receiver that is independent of the transmitters samples the communications band at
each code-phase of the spreading code. When a message element is detected at a particular code-
10 phase, the message element is appended to a queue associated with this code-phase. Message
elements detected at other code-phases are appended to queues associated with the corresponding
code-phases. Gaps between message elements at each code-phase define the beginning and end of
each message. In a preferred embodiment of this invention, the processing of the samples occurs
at a frequency above the baseband of the encoded message. An FFT processor provides a
magnitude and phase associated with each detected message. The magnitude distinguishes
message elements from noise elements, and changes in phase determine the bit value associated
with each message elements.

0051967-022600
20